Digital Scholarship@IAS—Achievements, Challenges, and Perspectives

I.

The typical product of traditional scholarship in the humanities (social sciences as well as historical studies) is a single-authored publication—be it a monograph, a journal article, or a contribution to a volume—which is brought to the market by a commercial or institutional publisher. The dissemination of a scholarly publication and its afterlife is guaranteed through a sophisticated system of identifiers such as the International Standard Book Number (ISBN) system, the International Standard Serial Number (ISSN), etc., a global network of libraries and catalogue systems, and other measures developed in library sciences to guarantee the survival of a publication for centuries to come. Publishers, authors, and libraries comply by those standards and are the principal stakeholders, while the respective home institution of a scholar is largely irrelevant for the publication, dissemination, sustainability and lasting findability of a scholarly product. Secondary instruments help to further disseminate publications—not-for-profit digital identifier systems and directories such as ResearcherID, International Standard Name Identifier (ISNI), Virtual International Authority File (VIAF), and Open Research and Contributor Identification (ORCID), the leading global scholarly ID registry as it seems,[1] not-for-profit digital repositories such as jstor.org, project MUSE, HathiTrust Digital Library, Internet Archive, arXiv.org, SocArXiv, PhilPapers.org, or for-profit enterprises such as academia.edu or researchgate should be mentioned here.[2] A third layer are institutional and personal repositories collecting metadata on the scholarly output of an institution or an individual scholar and providing open access to them—be it gold or green, depending on the copyright situation. Mention should also be made of commercial services such as Google Analytics or KUDOS, tools designed to help increase readership and citations and to obtain publication metrics.

Traditional scholarship is increasingly supplemented (and occasionally replaced) by scholars' engagement in digital scholarship or computational humanities,[3] fields that are still in the process of developing standards that will ensure the lasting findability and sustainability of products born-digital. Unlike print publications, digital products are ephemeral by nature and require continuous

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[1] Mary Mallery, "Scholarly Identification Systems in a Global Market: The ORCID Solution," Inernational Information & Library Review 48 iv (2016), pp. 269-273 <http://dx.doi.org/10.1080/10572317.2016.1243962>.

[2] Academia.edu in particular has been heavily criticized for its practices; see, e.g. Sarah Bond, "Dear Scholars, Delete Your Account At Academia.Edu," Forbes (January 23, 2017) <https://www.forbes.com/sites/drsarahbond/2017/01/23/dear-scholars-delete-your-account-at-academia-edu/#5f6606fd2d62>; Jen Waller, "In (Academic Social) Medias Res" (January 30, 2017) <http://oudigitalscholar.com/blog/in-academic-social-medias-res/>; Ico Maly, "The end of Academia.edu: how business takes over, again" diggit magazine (April 26, 2017) <https://www.diggitmagazine.com/column/end-academiaedu-how-business-takes-over-again>

[3] For the distinction between digital scholarship (digital humanities / digital social sciences) versus computational humanities / social sciences see, e.g., http://lab.softwarestudies.com/2012/03/computational-humanities-vs-digital.html>; <http://ichass.illinois.edu/index.php/what-are-the-computational-humanities-arts-and-social-sciences/> ;<http://dhd-wp.hab.de/?q=content/organisatorenbeitrag-digital-und-computational-humanities>.

support—they require storage space, need to be constantly updated technologically to remain accessible, and they need to be archived in a way that ensures their lasting findability. Academic home institutions play a central role in this new form of scholarship.

Another difference to traditional scholarship is the collaborative nature of digital scholarship (and even more so computational humanities), with scholars pairing not only with colleagues based in an institution of higher learning, but also with museum professionals, librarians and archivists, IT professionals and engineers—thus operating at the intersection of digital tools, methods and content, and the humanities. Examples in fields such as philology and textual criticism are work spaces allowing for digital critical editions with entirely new features that go beyond the possibilities and the space provided by a printed book,[4] or projects cataloguing manuscripts that provide space for crowd sourcing (or community sourcing).[5]

The often ephemeral character of digital scholarship as well as its collaborative nature also calls for entirely new ways to assess the scholarly value of born-digital products—a concern that is specifically relevant for early- and mid-career scholars who are often still being measured by their performance according to the standards of traditional scholarship.

Scholarship in the humanities is at a turning point, and the future is in many ways still uncertain. Commercial publishers try to redefine their roles in the new digital age and to envisage new business models, while funding agencies worldwide promote a rigorous open access strategy. Scholars for obvious reasons support the latter position, and they typically prefer open source applications to commercial software developers. Other standards and practices also change rapidly. Practically any print publication is also brought to the market in electronic form, with a growing tendency to e-publication only. While Portable Document Format (pdf) is still the leading standard for e-publications (reminiscent of the print product) this is likely to change. The Data Object Identifier (DOI) system might become a standard for online contents beyond traditional publications—datacite.org, for example, allows to assign DOI to research data. Moreover, scholars typically have their own web-based forums, through social media and applications such as GitHub, WordPress, etc., which allows them to express themselves in forms unknown to traditional scholarship— blogging becomes increasingly important, and personal and institutional websites, as well as mailing lists, serve as an additional platform for scholarly output. In addition, there is a growing market of open data publication and archiving systems, such as Open Context or the

[4] See, e.g., Middeleeuwse Verzamelhandschriften uit de Nederlanden (MVN) <https://www.huygens.knaw.nl/mvn/>; "Walden: A Fluid Text Edition" <http://digitalthoreau.org/fluid-text-toc/>; Digital Critical Editions of Texts in Greek and Latin <https://wiki.digitalclassicist.org/Digital_Critical_Editions_of_Texts_in_Greek_and_Latin>; "Digital Manuscripts as Critical Edition" <https://schoenberginstitute.org/2015/06/30/digital-manuscripts-as-critical-edition/>; Digital Critical Editions, ed. Daniel Apollon et al., Champaign, IL: University of Illinois Press, 2014 <https://muse.jhu.edu/book/32655>; "Ancient Worlds in Digital Culture", ed. Claire Clivaz et al., Leiden: Brill, 2016, this being volume one in a series entitled "Digital Biblical Studies".

[5] See, e.g. "Collaboration in Cataloging: Islamic Manuscripts at Michigan" <https://www.lib.umich.edu/special-collections-library/collaboration-cataloging-islamic-manuscripts-michigan>.

OCHRE Data Service, and journals such as the Journal of Open Humanities Data (JOHD) attempt to meet a similar need. Scholarly associations are actively engaged in formulating new standards of how to assess born-digital products, while academic institutions also adapt rapidly to the changing scholarly landscape and its needs. Following a seminal statement on the question of evaluating digital scholarship by Todd Presner (in 2012),[6] guidelines to assess e-products were issued in 2013 by the Modern Language Association (MLA),[7] by the American Historical Association (AHA) in June 2015,[8] by the College Art Association (CAA) and the Society of Architectural Historians (SAH) in January 2016,[9] and by the American Sociological Association (ASA) in August 2016.[10] The Middle East Studies Association (MESA) of North America established in February 2017 an Ad-hoc Committee to develop guidelines for digital scholarship (the present writer was appointed as a member of the Committee).[11] The Digital Humanities at Leipzig University, Germany, is an international leader in computational humanities, with a focus on both Classics as well as Arabic and Islamic Studies, and the University of Maryland just announced a new opening for an assistant professorship in "Persian Literature and Digital Humanities". Brown University just announced the new position of a Digital Scholarship Editor, a position "designed to extend Brown's capabilities as a central force in advancing new forms and methods of scholarly communication." The three examples illustrate the vigorous dynamics exerted by Digital Scholarship to define entirely new job profiles in the academia.

II.

Unlike traditional scholarship which requires only minimal involvement on the part of a scholar's home institution (a good library, a generous research budget, and enough time to engage in research often suffice to enable scholars to produce first-rate research), digital scholarship and even more so computational humanities is virtually impossible without an infrastructure of services and collaborations to enable and support digital initiatives—an infrastructure that is

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[6] Todd Presner, "How to Evaluate Digital Scholarship," *Journal of Digital Humanities* 1 iv (2012) <http://journalofdigitalhumanities.org/1-4/how-to-evaluate-digital-scholarship-by-todd-presner>.

[7] "Guidelines for Evaluating Work in Digital Humanities and Digital Media" <https://www.mla.org/About-Us/Governance/Committees/Committee-Listings/Professional-Issues/Committee-on-Information-Technology/Guidelines-for-Evaluating-Work-in-Digital-Humanities-and-Digital-Media>.

[8] "Guidelines for the Professional Evaluation of Digital Scholarship by Historians" <https://www.historians.org/teaching-and-learning/digital-history-resources/evaluation-of-digital-scholarship-in-history/guidelines-for-the-professional-evaluation-of-digital-scholarship-by-historians>.

[9] "Guidelines for the Evaluation of Digital Scholarship in Art and Architectural History" <http://www.collegeart.org/news/2016/02/23/the-college-art-association-and-the-society-of-architectural-historians-release-guidelines-for-the-evaluation-of-digital-scholarship-in-art-and-architectural-history/>.

[10] "What Counts? Evaluating Public Communication in Tenure and Promotion". Final Report of the American Sociological Association Subcommittee on the Evaluation of Social Media and Public Communication in Sociology, American Sociological Association, Washington DC, 2016; see <http://www.asanet.org/careers/WhatCounts>.

[11] See also Colleen Flaherty, "Tweeting your way to tenure: Sociologists discuss how departments should consider social media activity and other public communications in tenure and promotion decisions," *Inside Higher Ed* (September 8, 2016) <https://www.insidehighered.com/news/2016/09/08/sociologists-discuss-how-departments-should-consider-social-media-activity-and-other>.

characteristically offered by a scholar's home institution. Most, if not all academic institutions in North America and Europe have set up a robust infrastructure for access to and sustainability of research outputs and digital collections, for research data management, data curation, geospatial analysis, visualization, and other digital technologies, typically in the form of Digital Scholarship/Humanities Centers or Labs.[12] They deliver wide-ranging digital resources and services to their faculty to allow for cutting-edge e-products in the humanities. They have furthermore set out long-term strategies for digital curation which involves maintaining, preserving and adding value to digital research data throughout its lifecycle, to prevent the risk of digital obsolescence. Mention should also be made by cross-institutional initiatives such as the DARIA initiative (Digital Research Infrastructure for the Arts and Humanities), and digital scholarship training camps, analog and virtual, for historians and social scientists, such as The Programming Historian or the Digital Humanities Summer Institute at the University of Victoria, British Columbia, Canada.

III.

With the IAS' decision in 2016 to engage in Digital Scholarship through the creation (in May 2016) of a 50% position exclusively devoted to this field, a first step was taken to enable and support the IAS and its faculty (and members) in view of the rapidly changing landscape in scholarship.

Over the course of the academic year 2016/17, significant progress has been achieved—a Digital Scholarship working group (Jeff Berliner, María Tuya, Marcia Tucker, Sabine Schmidtke) was formed to decide on first measures and initiatives and to outline its future development. A successful series of lunch talks ("Digital Scholarship Conversations") was initiated and six speakers gave talks on various aspects of digital scholarship, events which resonated among faculty and members of all four schools as well as by external visitors (Princeton U, Princeton Theological Seminary, Rutgers). A website was launched, containing a powerful toolbox for Digital Scholarship, DS resources for historians, social scientists and natural scientists, information on events in this field at the IAS and neighboring institutions, and DS projects at the IAS. The site is continuously being curated. In addition, the IAS is a member of the New Jersey Digital Humanities Consortium established in September 2016. It was further decided to set up an institutional repository (based on DSpace), a decision of immediate relevance for fundraising efforts and to showcase the output of IAS faculty.

Several Digital Scholarship projects were initiated:

- As a continuation of the two "Digital Ottoman Platform" workshops of 2015 and 2016, the IAS sponsors a website through which this project will be further developed, the openottoman.org (faculty in charge: Sabine Schmidtke). The official launch of the website is scheduled for the

[12] See, e.g., Rikk Mulligan, "Digital Scholarship Support in ARL Member Libraries: An Overview" (April 19, 2016) <http://www.arl.org/focus-areas/scholarly-communication/digital-scholarship/digital-scholarship-support/3978-digital-scholarship-support-in-arl-member-libraries-an-overview>. See also <http://www.arl.org/focus-areas/scholarly-communication/digital-scholarship/digital-scholarship-support>.

ICOSEH (International Congress of Ottoman Social and Economic History) meeting in Sofia set for 24-28 July 2017. In addition to the IAS, the OpenOttoman is developing into a powerful international consortium, partnering among other institutions with Pleiades, a joint project of the Ancient World Mapping Center, the Stoa Consortium, and the Institute for the Study of the Ancient World.

- On April 11, 2017, "The Zaydi Manuscript Tradition: A Digital Portal" (faculty in charge: Sabine Schmidtke) has been launched (with an initial number of 1,000 datasets), a project in the field of cultural preservation and access which is implemented in partnership with Hill Museum & Manuscript Library (HMML). While HMML serves as a repository for the images and metadata, a digital portal which allows systematic access to the material included in the project is housed at the IAS' website. Until 2020, some 15,000 to 20,000 manuscripts (mainly from Yemen, but also from European and North American libraries and other places in the Middle East) will be uploaded unto the repository and the portal.
- Preparations to digitize the Institute's unique collection of squeezes of Greek inscriptions (ca. 60,000 pieces) with the aim of making them available through open access have been taken (faculty in charge: Angelos Chaniotis).
- Various websites have been set up to showcase research initiatives by IAS' faculty, such as Patrick Geary's Medieval Genetics project, Sabine Schmidtke's Shii Studies Research Program, and Angelos Chaniotis' database of sources for the study of emotions in the Greek world which will soon go online.
- A project in the field of Near Eastern Studies was started, in partnership with the Consejo Superior de Investigaciones, Madrid (Jan Thiele), titled "Eduard Glaser and His Arabic Manuscript Projects" (faculty in charge: Sabine Schmidtke) which is using the OCHRE Data Service of the University of Chicago as its platform.

IV.

The ratio of born-digital products and the need to enable, support, and maintain Digital Scholarship projects initiated by the IAS' faculty will grow exponentially over the coming years, and members will increasingly request support in this area. Funding agencies are and will continue to increasingly require institutional support and strategies and future faculty will most likely also inquire as to what the IAS has to offer in terms of digital services, resources, and strategies.

It seems therefore incumbent that Digital Scholarship@IAS enters a more advanced stage of engagement. In addition to the increasing demand in manpower to curate the websites housed by www.ias.edu to showcase the IAS' faculty and its individual research initiatives, to populate and curate the IAS' institutional repository, and to continue the successful initiatives of the first year's engagement in Digital Scholarship, the time has come to devise a long-term institutional strategy on how to support digital scholarship projects during the incubation and implementation phases and how to ensure their long-term maintenance (scholarly as well as technically), their sustainability and findability.

At present there are no provisions for such an IAS institutional commitment—the lifetime of a digital project and its continuous curation ends with the departure of the faculty in charge either into retirement or to a different institution, and there is at present neither a budget for the use of external data services such as OCHRE nor the required IT support (programming, web design, etc.) to ensure regular maintenance for completed projects. A case in point is the Piero della Francesca 3D exhibition, created by Marilyn Lavin and launched in 2008, which was cutting-edge when first released[13]—the site was not curated and is by now outdated and largely obsolete, technologically, as well as aesthetically.

Moreover, if indeed there will be at any point a strategic decision to set up an additional school at the IAS in the field of computer science, it would seem logical and highly desirable to make computational humanities a part of it.[14]

[13] See also Marilyn Aronberg Lavin, "Piero della Francesca: Legend of the True Cross. 3-D Walkthrough, Realtime, Interactive Computer Model," Rivista della Fondazione Piero Della Francesca 1 (2008), pp. 55-68.

[14] Among the fascinating areas of research in this context which are immediately related to some of the research conducted at present in the School for Historical Studies (esp. Near Eastern Studies) mention should be made of computational codicology and paleography, a field that is particularly advanced in Genizah studies. See, e.g., Peter A Stokes, "Digital approaches to paleography and book history: some challenges, present and future," Frontiers in Digital Humanities 2 (October 2015), Article 5 <http://journal-cdn.frontiersin.org/article/155345/files/pubmed-zip/versions/1/pdf>; Tal Hassner, Malte Rehbein, Peter A. Stokes, and Lior Wolf, "Computation and Palaeography: Potentials and Limits," Dagstuhl Reports 2 ix (2012), pp. 184–199 <http://drops.dagstuhl.de/opus/volltexte/2013/3890/pdf/dagrep_v002_i009_p184_s12382.pdf>; Tomas Wilkinson, Jonas Lindström, Anders Brun, "Neural Ctrl-F: Segmentation-free Query-by-String Word Spotting in Handwritten Manuscript Collections" (submitted on 22 Mar 2017) <arXiv:1703.07645>. Relevant in this context is also the "Archaeology of Reading in Early Modern Europe" project; see also "Computational Humanities at the Blavatnik School of Computer Science" at Tel Aviv University.—Mention should also be made of the fascinating field of digital archeology, see, e.g., The Institute for Digital Archaeology, in Oxford UK. See also their blog on Twitter @DigiArchaeo.